CLAIMS

1. Method of transmitting data on a physical resource using

- a layer (RRC) responsible for the management of the physical resource and the guarantee of the quality of service;

- a sub-layer (RLC) responsible for supplying a transmission support in accordance with the required quality of service;

- a sub-layer (MAC) responsible for access to the physical resource;

- a physical layer (PHY) responsible for the physical processing of the data;

access to the physical resource being divided into transmission time intervals (TTI);

the sub-layer (RLC) being able to segment the data into transmission units (RLC PDU);

the sub-layer (MAC) being able to transmit at least one transmission unit per transmission time interval;

characterised in that, in the event of degradation of the transmission conditions on the physical resource, the size of the transmission units is reduced.

2. Data transmission method according to Claim 1, characterised in that, at the start of a connection between a transmitter and receiver accessing the physical resource, the layer (RRC) determines a plurality of possible transmission unit sizes for a transmission time interval (TTI) and in that the sub-layer (MAC) selects, from amongst this plurality, a transmission unit size according to the transmission conditions, a smaller size being selected in the case of degradation of the transmission conditions on the physical resource.

3. Data transmission method according to Claim 1, characterised in that, at the start of a connection between a transmitter and receiver accessing the physical

resource, the layer (RRC) fixes a first size of transmission unit (RLC PDU) according to the transmission conditions and transmits it to the sub-layer (MAC).

4. Data transmission method according to Claim 3, characterised in that, in the case of degradation of the transmission conditions on the physical resource, the layer (RRC) fixes a second size of transmission unit (RLC PDU) less than the first and transmits it to the sub-layer (MAC).

5. Data transmission method according to one of Claims 1 to 4, characterised in that the layer (RRC) guarantees a quality of service by assigning a set level SIR_t to the ratio of received signal power to noise plus interference;

in the case of degradation of the transmission conditions the transmission power of the transmitter is increased so as to maintain the quality of service;

the size of the transmission unit (RLC PDU) is reduced when the transmission power reaches a maximum value.

6. Data transmission method according to Claims 4 and 5, characterised in that the layer (RRC) allocates resources by lowering the set level SIR_t of a service according to the inverse of its degree of priority.

7. Data transmission method according to one of the preceding claims, characterised in that the layer (RLC) functions in acknowledged mode, a transmission unit being retransmitted if the acknowledgement is not received.

8. UMTS mobile telephony system using a data transmission method according to one of the preceding claims.

9. Mobile telephony system according to Claim 8 using a data transmission method according to Claim 2, characterised in that the layer (RRC) supplies to the sub-layer (MAC) the plurality of possible sizes by means of the TFCS table.

10. Mobile telephony system according to Claim 8 using a data transmission method according to Claim 4, characterised in that the layer (RRC) fixes a second size for the transmission unit by sending a new TFCS table to the sub-layer (MAC).